gram goes beyond merely treating the sick who may or may not seek medical care. Rather, it includes the enlistment of a cadre of different professional disciplines to work together with one common objective: to control hypertension.

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Hepatitis, Immune Globulins and Vaccines

IMMUNE SERUM GLOBULINS (ISG) are sterile solutions containing antibodies derived from human blood. Protection against hepatitis A is conferred by ISG administration within one to two weeks after exposure to hepatitis A as well as preexposure prophylaxis.

ISG manufactured after 1972 has detectable antibody to hepatitis B (anti-HB_s) present in low titer. In addition, hepatitis B immune globulin (HBIG) of high anti-HB_s titer (usually 1:100,000) is available. Both preparations offer some protection before exposure and soon after exposure to hepatitis B. The following suggestions may aid you in selecting prophylaxis for hepatitis B.

Preexposure Prophylaxis

Institutions with high-risk areas, such as hemodialysis units, or custodial institutions for mentally retarded persons should consider routine serologic screening of their employees for anti-HB_s. This will avoid costly and unnecessary use of immune globulins after acute exposure in a person with antibody. At present it appears impractical to recommend use of HBIG in persons with continued exposure to HB_s antigen. Current costs to pharmacies of HBIG is 75 to 100 times per ml the cost of ISG. For large numbers of persons, where globulin use is desired, ISG should be considered for immunoprophylaxis.

Postexposure Prophylaxis

The presence of HB_s antigen appears to correlate well with infectivity and when a test for this becomes commercially available will provide a useful tool in assessing the risk of acute exposures.

HBIG is most useful following a single acute exposure to a relatively large inoculum of HB virus, such as accidental needle stick, mucosal exposure, blood spill on an open wound. HBIG, 0.05 to 0.07 ml per kg of body weight, should be administered as soon as possible and the dose repeated in 25 to 30 days.

Infants born to mothers with acute B hepatitis in the third trimester, or mothers in whom tests are positive for HB_s antigen, should be given HBIG, 0.13 ml per kg of body weight, or ISG, 0.5 ml per kg of body weight in a single dose.

Immune globulin should be administered as soon as possible after acute exposure or birth. It is preferable to give ISG at once, rather than delay prophylaxis more than two days while obtaining HBIG. Administration of two doses approximately one month apart appears to be superior to one larger dose given early.

The use of immune globulin in cases of sexual contact or acute hepatitis B is an unsettled area. HBIG does offer protection to sexual contacts even when administered weeks after exposure, but this may reflect the reduced amount of virus present in saliva and genital secretions as compared with blood. For the present, ISG or HBIG would seem of benefit in a sex partner who does not have HB_s antigen or anti-HB_s.

Experimental hepatitis B virus vaccines show promise in initial human and animal trials. In animal trials the vaccine has been useful when administered after exposure to virus (because of the long incubation period), as well as before virus exposure. In initial human trials, the vaccine appears to be safe, to induce antibody in most employees and patients, and to provide protection against hepatitis B. Use of hepatitis vaccine in high-risk groups may be reasonable in the near future.

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Rabies Treatment Update

HUMAN DIPLOID CELL strain rabies vaccine is now available through the Center for Disease Control on a limited, experimental basis. Patients may be eligible for the vaccine if they have been bitten by a *proven* rabid animal, have a serious allergy to duck embryo vaccine or in whom there is no response to therapy with duck embryo vaccine as shown by an adequate antibody titer rise. Human diploid cell strain rabies vaccine stimu-

lates a much higher antibody response than duck embryo vaccine and at least at this point has *not* been associated with any serious anaphylactic, neuroparalytic or systemic reactions.

Physicians are again reminded that bites from gophers, squirrels, rats, mice, hamsters, rabbits, chipmunks, muskrats, guinea pigs, moles and chinchillas seldom if ever require systemic antirabies treatment. On the other hand bites from animals such as bats, bobcats, coyotes, foxes, skunks and other feral species should be considered as rabies exposure until proven otherwise.

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Malaria Prophylaxis

ON MARCH 10, 1978 the Parasitic Disease Division of the Center for Disease Control (CDC) published a supplement entitled *Chemoprophylaxis of Malaria* which includes recommendations to travelers and a comprehensive review of the agents available. The following is a brief summary:

Chloroquine phosphate is the drug of choice for suppression, that is, prevention of clinical symptoms of malaria by strains sensitive to the drug. The recommended adult dose is 500 mg (300 mg base) taken weekly; 5 mg per kg of body weight base for children taken weekly beginning two weeks before entering a malarious area and continuing for six weeks after leaving. In this dosage, side effects other than gastrointestinal disturbances—headache, dizziness and blurred vision—are rare. These adverse reactions may be reduced by taking chloroquine with meals. Travelers should be told that this regimen may not protect against chloroquine resistant forms.

Chloroquine suppresses the erythrocytic stages of Plasmodium and if the above regimen is followed, Plasmodium falciparum and Plasmodium malariae, which do not persist in exoerythrocytic phases, will usually be eradicated.

Infection with Plasmodium vivax and Plasmodium ovale may persist in the liver and produce delayed attacks. The exoerythrocytic form is eliminated by a two-week course of primaquine, 15 mg daily for adults and 0.3 mg per kg of body weight daily for children. The use of primaquine for prophylaxis should be reserved for travelers heavily exposed to malaria, who do not have glucose-6-phosphate dehydrogenase (G6PD) deficiency. This drug is not recommended for pregnant women.

Cases of chloroquine-resistant P. falciparum have been documented in Panama, South America, India, Southeast Asia, New Guinea and, most recently, in persons returning from Africa. Travelers may consult their health department or the CDC for information about specific countries. A combination of pyrimethamine and sulfadoxine is an effective suppressive agent for chloroquine-resistant P. falciparum. It is not at present available in the United States but may be purchased in other countries. Travelers may start taking chloroquine before entering the malarious area and then take pyrimethamine, 50 mg, and sulfadoxine, 1,000 mg, once every two weeks continuing for six weeks after last exposure in a malarious area. This combination is active against the erythrocytic stages of malaria. Pyrimethamine-resistant strains of P. vivax will not be suppressed. This preparation is not recommended for pregnant women.

As with all medications, travelers are advised to take a sufficient supply with them for the entire trip. Clinicians should remember that the incubation period of malaria may be prolonged for months in persons who have taken antimalarials. Serologies (done by the Center for Disease Control) are useful in cases in which there is a question of mixed infection where primaquine therapy is being considered.

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Joy of the Communal Bath or Don't Go Near the Water

AS HOT TUBS, whirlpool baths and pools become a more regular feature of private and public recreation, clinicians can expect to see the infectious complications of these communal pools. Common offending agents include Pseudomonas aeroginosa, Staphylococcus aureus, viruses including enteroviruses and adenoviruses, and Mycobacterium marinum.

Several outbreaks traced to Pseudomonas aeroginosa serogroup 11 contamination of whirlpools have been recognized. High temperatures and